

SEQUENCE LISTING

<110> Dale, James Langham
Echeverria, Santy Peraza

<120> BANANA RESISTANCE GENES AND USES THEREOF

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<140> 10573372

<141> 2006-10-31

<150> PCT/AU2004/001300

<151> 2004-09-23

<150> AU 2003905222

<151> 2003-09-25

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Gln	Thr	Leu	Leu	Asp	Lys	Ala	Ser	Asn	Cys	Ala	Ile	Gln	Gln	Leu	Ala	
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cgg	cgc	cgc	ggc	ctt	cac	gat	gac	ctg	agg	cgg	ctg	cgg	acg	tct	ctg	144
Arg	Arg	Arg	Gly	Leu	His	Asp	Asp	Leu	Arg	Arg	Leu	Arg	Thr	Ser	Leu	
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ctc	cgg	atc	cat	gcc	atc	ctc	gac	aag	gca	gag	acg	agg	tgg	aac	cat	192
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Lys	Asn	Thr	Ser	Leu	Val	Glu	Leu	Val	Arg	Gln	Leu	Lys	Asp	Ala	Ala	
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Tyr	Asp	Ala	Glu	Asp	Leu	Leu	Glu	Glu	Leu	Glu	Tyr	Gln	Ala	Ala	Lys	
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caa	aag	gtc	gag	cac	cgg	gga	gac	cag	ata	agc	gac	ctc	ttt	tct	ttt	336
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ggg Gly	act Thr 130	cga Arg	ttg Leu	agg Arg	gag Glu	atc Ile 135	cag Gln	ggg Gly	aag Lys	ctg Leu	tgc Cys 140	aac Asn	att Ile	gct Ala	gcc Ala	432
gat Asp 145	atg Met	atg Met	gat Asp	gtc Val	atg Met 150	cag Gln	cta Leu	ttg Leu	gca Ala	ccc Pro 155	gat Asp	gat Asp	ggg Gly	ggg Gly	aga Arg 160	480
caa Gln	ttc Phe	gac Asp	tgg Trp	aag Lys 165	gtg Val	gtg Val	aga Arg	aga Arg	gaa Glu 170	acg Thr	agc Ser	tct Ser	ttc Phe	ttg Leu 175	acc Thr	528
gaa Glu	acc Thr	gtc Val	gtg Val 180	ttt Phe	ggg Gly	cgg Arg	gac Asp	caa Gln 185	gaa Glu	agg Arg	gag Glu	aaa Lys	gta Val 190	gta Val	gaa Glu	576
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ctc Leu	gtc Val 210	gga Gly	atc Ile	gga Gly	ggg Gly	gtt Val 215	ggg Gly	aag Lys	acg Thr	act Thr	ctg Leu 220	gct Ala	cag Gln	ctc Leu	gtg Val	672
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gtc Val	ctc Leu 290	gat Asp	gat Asp	gtg Val	tgg Trp	agc Ser 295	gaa Glu	aac Asn	agg Arg	gat Asp	gac Asp 300	tgg Trp	gaa Glu	agg Arg	ctg Leu	912
tgc Cys 305	gca Ala	cca Pro	cta Leu	agg Arg	ttt Phe 310	gca Ala	gca Ala	aga Arg	ggc Gly	agc Ser 315	aag Lys	gtt Val	ata Ile	gtc Val	aca Thr 320	960
act Thr	cga Arg	gac Asp	aca Thr	aag Lys 325	att Ile	gcc Ala	agc Ser	atc Ile	att Ile 330	ggc Gly	aca Thr	atg Met	aag Lys	gaa Glu 335	att Ile	1008
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tgt Cys	gca Ala	ttt Phe 355	ggg Gly	tct Ser	gtg Val	aac Asn	ccc Pro 360	cag Gln	gag Glu	cat His	cta Leu	gag Glu 365	ctc Leu	gag Glu	gtt Val	1104

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aaa Lys 385	aca Thr	cta Leu	gga Gly	agc Ser	ttg Leu 390	ttg Leu	cgg Arg	ttg Leu	gat Asp	gtc Val 395	agc Ser	caa Gln	gaa Glu	cac His	tgg Trp 400	1200
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gca Ala 465	cat His	caa Gln	gga Gly	aac Asn	aag Lys 470	agg Arg	atg Met	gaa Glu	gat Asp	gtc Val 475	gga Gly	agc Ser	agc Ser	tac Tyr	ttc Phe 480	1440
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gtt ggg aag ctg att tct ctg caa gaa ttg tct gca ttc aaa gtg cta Val Gly Lys Leu Ile Ser Leu Gln Glu Leu Ser Ala Phe Lys Val Leu 675 680 685			2064
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<212> PRT

<213> Musa acuminata

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 Leu Pro Phe Ile His Ser Leu Arg Ile Ile Trp Ser Pro Gln Lys Val
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 Met Phe Asp Leu Glu Glu Gln Glu Leu Val His Ser Leu Thr Ala Leu
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 Arg Arg Leu Glu Phe Phe Arg Cys Lys Asn Leu Gln Ser Leu Pro Thr
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 Glu Leu His Thr Leu Pro Ser Leu His Ala Leu Val Val Ser Asp Cys
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 Pro Gln Ile Gln Ser Leu Pro Glu Lys Gly Leu Pro Thr Leu Leu Thr
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Glu Ile Phe Asn Arg Ser Ile Asn Leu Ile Val Ala Glu Leu Arg Leu	
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cag ttg aat gcg aga gcc gag ctg aac aat ctg cag aga aca cta ttg	144
Gln Leu Asn Ala Arg Ala Glu Leu Asn Asn Leu Gln Arg Thr Leu Leu	
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Arg Thr His Ser Leu Leu Glu Glu Ala Lys Ala Arg Arg Met Thr Asp	
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Lys Ser Leu Val Leu Trp Leu Met Glu Leu Lys Glu Trp Ala Tyr Asp	
65 70 75 80	
gcc gac gac atc ctc gac gag tac gag gcc gca gca atc cga ctg aag	288
Ala Asp Asp Ile Leu Asp Glu Tyr Glu Ala Ala Ala Ile Arg Leu Lys	
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Val	Pro	Leu	Ala	His	Lys	Val	Ala	Asp	Ile	Arg	Lys	Arg	Leu	Asn	Gly	
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Val	Thr	Leu	Glu	Arg	Glu	Leu	Asn	Leu	Gly	Ala	Leu	Glu	Gly	Ser	Gln	
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Pro	Leu	Asp	Ser	Thr	Lys	Arg	Gly	Val	Thr	Thr	Ser	Leu	Leu	Thr	Glu	
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Leu	Gly	Gly	Ala	Gly	Lys	Thr	Thr	Leu	Ser	Gln	Leu	Ile	Phe	Asn	Asp	
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Lys	Arg	Val	Glu	Glu	His	Phe	Pro	Leu	Arg	Met	Trp	Val	Cys	Val	Ser	
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Asp	Asp	Phe	Asp	Val	Lys	Arg	Ile	Thr	Arg	Glu	Ile	Thr	Glu	Tyr	Ala	
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Thr	Asn	Gly	Arg	Phe	Met	Asp	Leu	Thr	Asn	Leu	Asn	Met	Leu	Gln	Val	
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Asn	Leu	Lys	Glu	Glu	Ile	Arg	Gly	Thr	Thr	Phe	Leu	Leu	Val	Leu	Asp	
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Asp	Val	Trp	Asn	Glu	Asp	Pro	Val	Lys	Trp	Glu	Ser	Leu	Leu	Ala	Pro	
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Leu	Asp	Ala	Gly	Gly	Arg	Gly	Ser	Val	Val	Ile	Val	Thr	Thr	Gln	Ser	
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Lys	Lys	Val	Ala	Asp	Val	Thr	Gly	Thr	Met	Glu	Pro	Tyr	Val	Leu	Glu	
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Glu	Leu	Thr	Glu	Asp	Asp	Ser	Trp	Ser	Leu	Ile	Glu	Ser	His	Ser	Phe	
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agg	gag	gcg	agc	tgc	tct	agt	aca	aat	cct	aga	atg	gaa	gag	atc	ggg	1056
Arg	Glu	Ala	Ser	Cys	Ser	Ser	Thr	Asn	Pro	Arg	Met	Glu	Glu	Ile	Gly	
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atg Met	ggg Gly 370	aga Arg	tat Tyr	cta Leu	aga Arg	tct Ser 375	aag Lys	cac His	gga Gly	gaa Glu	agc Ser 380	agc Ser	tgg Trp	aga Arg	gaa Glu	1152
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aca Thr 450	gag Glu	tcg Ser	aaa Lys	aga Arg	tcg Ser	gag Glu 455	gac Asp	atg Met	gca Ala	gaa Glu	gaa Glu 460	tgc Cys	ttt Phe	gat Asp	gat Asp	1392
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tac Tyr	ctg Leu	ggc Gly	ctg Leu	tct Ser	aat Asn	acg Thr	aga Arg	att Ile	caa Gln	agg Arg	ttg Leu	ccg Pro	gag Glu	tct Ser	gta Val	1824

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Pro	Cys	Leu	Tyr	Pro	Asn	Asn	Asn	Glu	Asp	Ser	Leu	Ser	Thr	Cys	Phe		
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Glu	Asn	Leu	Thr	Ser	Leu	Ser	Phe	Leu	Asp	Ile	Lys	Asp	Cys	Pro	Asn		
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Phe	Gln	Ala	Leu	Thr	Ser	Leu	Glu	Ser	Leu	Thr	Ile	Gln	Asn	Cys			
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His	Ile	Val	Asp	Cys	Pro	Asn	Leu	Glu	Val	Leu	Pro	Ala	Asn	Leu	
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Gln	Ser	Leu	Cys	Ser	Leu	Ser	Thr	Leu	Tyr	Ile	Val	Arg	Cys	Pro	
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Ala	Asp	Asp	Ile	Leu	Asp	Glu	Tyr	Glu	Ala	Ala	Ala	Ile	Arg	Leu	Lys
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 Val Leu Glu Thr Glu Thr Trp Glu Met Pro Pro Ala Ala Ser Asp Val
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 <222> (281)...(281)
 <223> glycine, serine, alanine, threonine, proline

<220>
 <221> VARIANT
 <222> (283)...(283)
 <223> aspartic acid, glutamic acid, arginine, lysine, histidine

<220>
 <221> VARIANT
 <222> (285)...(285)
 <223> tyrosine, valine, isoleucine, leucine, methionine, phenylalanine, tryptophan

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 1 5 10 15
 Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Leu Pro Xaa Xaa Xaa Gly Xaa Leu
 20 25 30
 Xaa Xaa Leu Arg Tyr Leu Xaa Xaa Ser Xaa Asn Xaa Xaa Ile Gln Arg
 35 40 45
 Leu Pro Glu Ser Xaa Xaa Xaa Leu Xaa Xaa Leu Gln Xaa Leu Xaa Leu
 50 55 60
 Xaa Gly Cys Xaa Leu Xaa Xaa Xaa Pro Xaa Xaa Met Ser Xaa Leu Xaa
 65 70 75 80
 Xaa Leu Arg Gln Leu Xaa Xaa Xaa Xaa Xaa Xaa Ile Xaa Xaa Ile Xaa
 85 90 95
 Xaa Val Gly Xaa Leu Ile Xaa Leu Gln Glu Leu Xaa Ala Xaa Xaa Val
 100 105 110
 Xaa Xaa Xaa Xaa Gly Xaa Xaa Xaa Ala Glu Leu Ser Xaa Xaa Xaa Gln
 115 120 125
 Leu Xaa Xaa Xaa Leu Xaa Ile Xaa Asn Leu Xaa Asn Val Xaa Xaa Xaa
 130 135 140
 Xaa Glu Xaa Xaa Lys Ala Xaa Leu Xaa Xaa Lys Gln Xaa Leu Xaa Xaa
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 Leu Xaa Leu Xaa Trp Ala Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa Glu
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 Leu Xaa Xaa Leu Xaa Ile Xaa Xaa Tyr Xaa Gly Xaa Xaa Xaa Pro Ser
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 Trp Xaa Xaa Xaa Xaa Xaa Leu Pro Asn Xaa Xaa Thr Xaa Xaa Leu Xaa
 210 215 220
 Xaa Cys Xaa Arg Leu Xaa Xaa Leu Xaa Xaa Xaa Gly Gln Leu Xaa Xaa
 225 230 235 240
 Leu Xaa Xaa Leu His Xaa Xaa Xaa Met Xaa Xaa Val Xaa Gln Xaa Xaa

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				245					250					255	
Xaa	Xaa	Xaa	Xaa	Gly	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Phe	Pro	Xaa	Leu	Glu
			260					265					270		
Xaa	Leu	Xaa	Xaa	Xaa	Xaa	Met	Pro	Xaa	Leu	Xaa	Glu	Xaa			
		275					280					285			